

2015

Habitat Resilience: Dams; the Past, the Future and Everything In-between (2015 State of the Bay Presentation)

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Maine Rivers

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CBEP State of the Bay 2015

Habitat Resilience: Dams



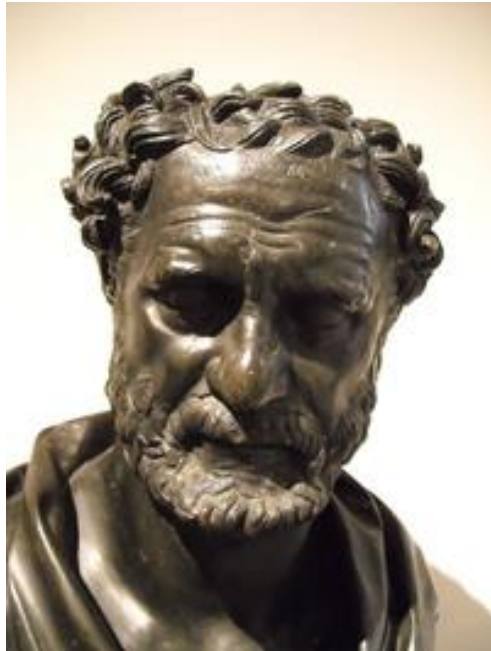
**The Past, the Future and
Everything In-between**

Maine



Rivers

“No man ever steps in the same river twice, for it's not the same river and he's not the same man.” -Heraclitus





Fish kill, Androscoggin River

Chemical containers,
Eastland Woolen Mill



Environmental impacts of dams:

Difficult or impossible for **migratory species** to pass

Change water temperature in impoundments- usually **increasing temperatures** by decreasing flow

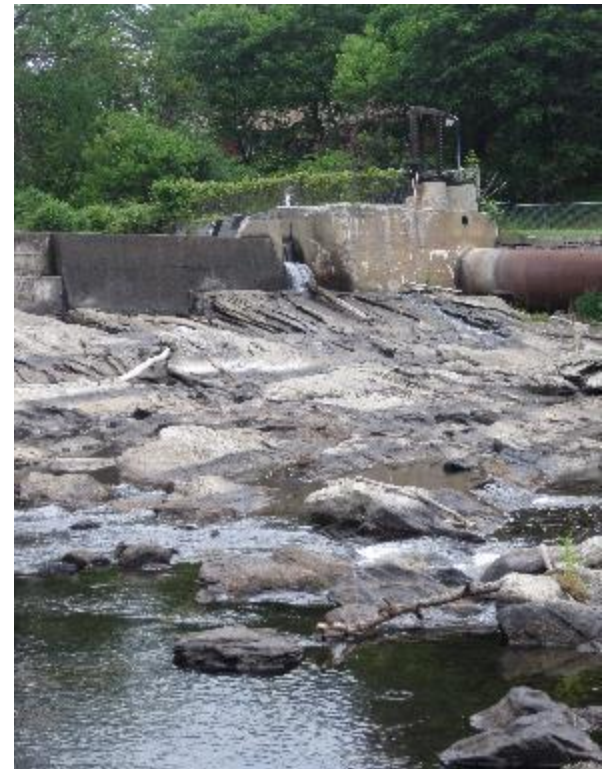
Reducing the circulation of water and increasing the temperature often results in **less oxygen**

Increased upland flooding

Dams hold back silt, debris, and nutrients

Dams increase predator risk- reservoirs tend to be warm and murky, favoring predators

Dams reduce the **productivity of estuaries and bays**
(= fewer juvenile fish due to inaccessibility of spawning grounds)









Left: Carolyn Hall
Above: mill on Megunticook River
Below: mill on St. George River





Charles Atkins

1. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That from and after the passage of this Act, it shall be lawful for the inhabitants of the town of [unclear] to hold their annual meeting in the month of March or April, to ballot a fish committee of not more than seven persons inhabitants of said town, who shall be sworn to their duty; and it shall be the duty of said Committee to keep open and clear the fish ways, which may be built around mills or other obstructions on Royal River or the branch thereof, as hereinafter provided, to be kept open and clear for the fish to come up and down said river.

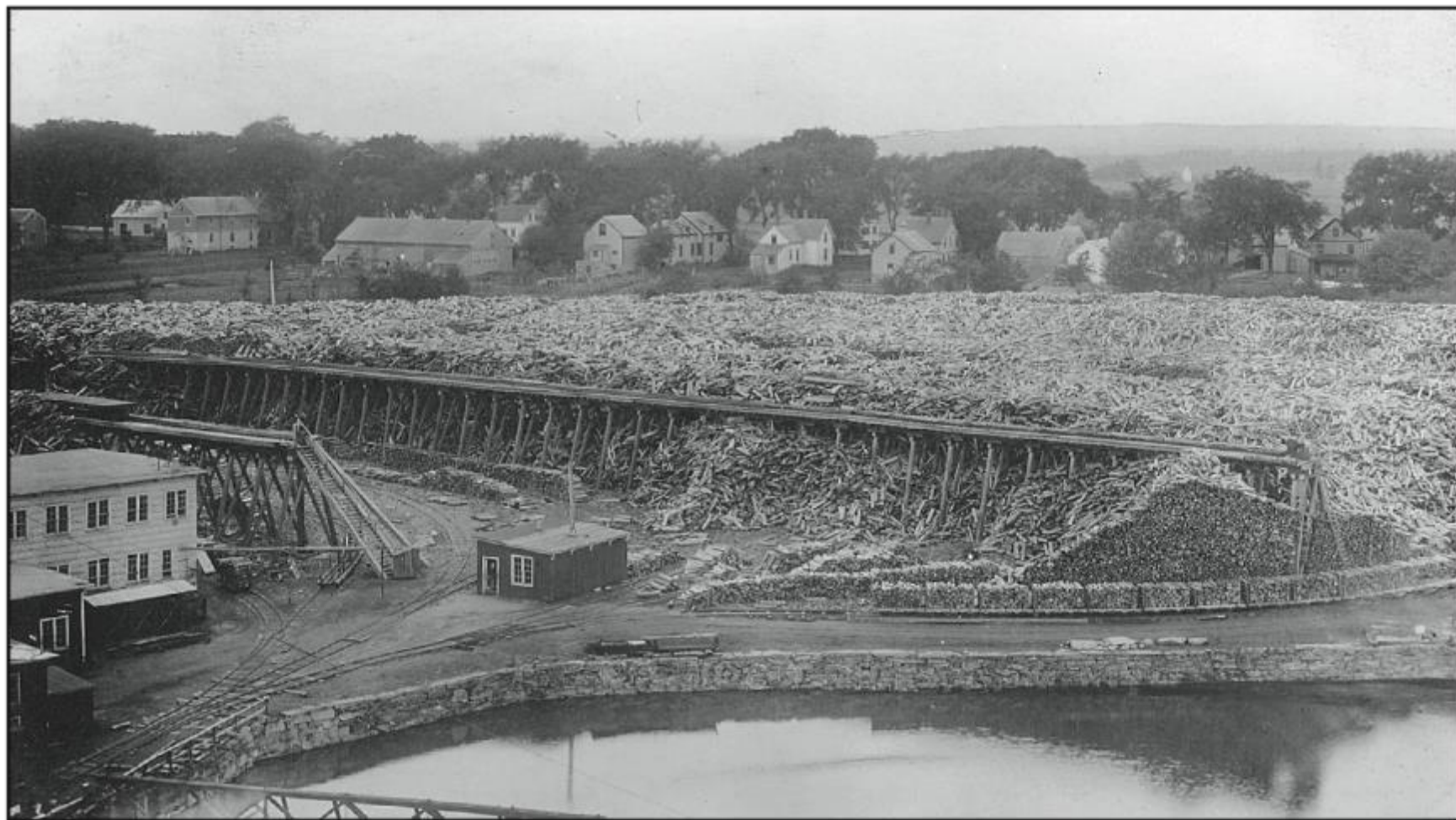
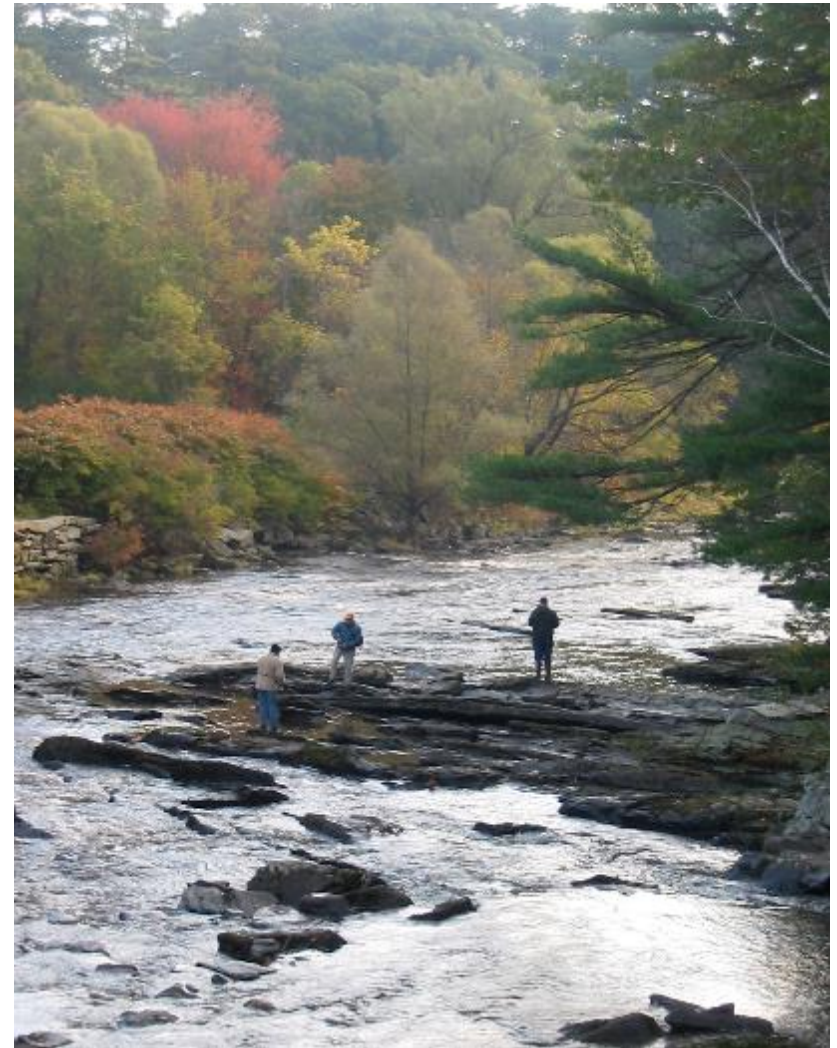
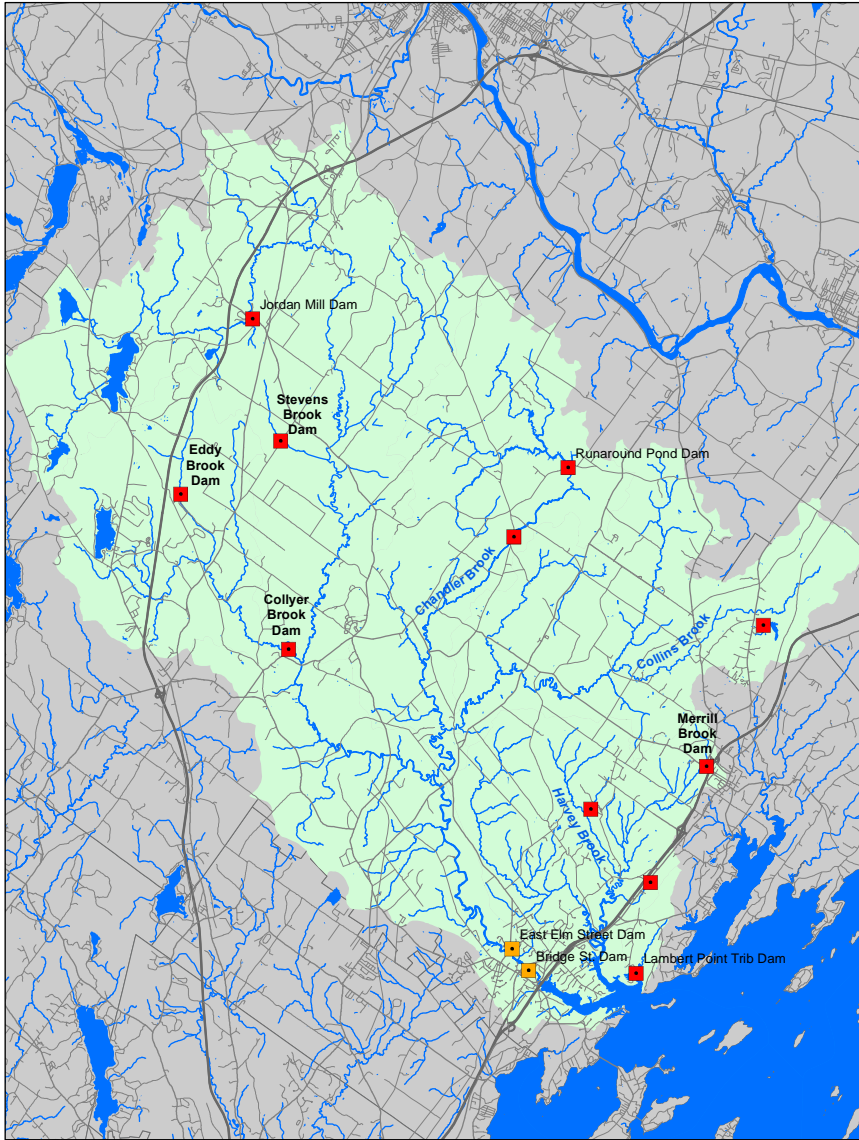


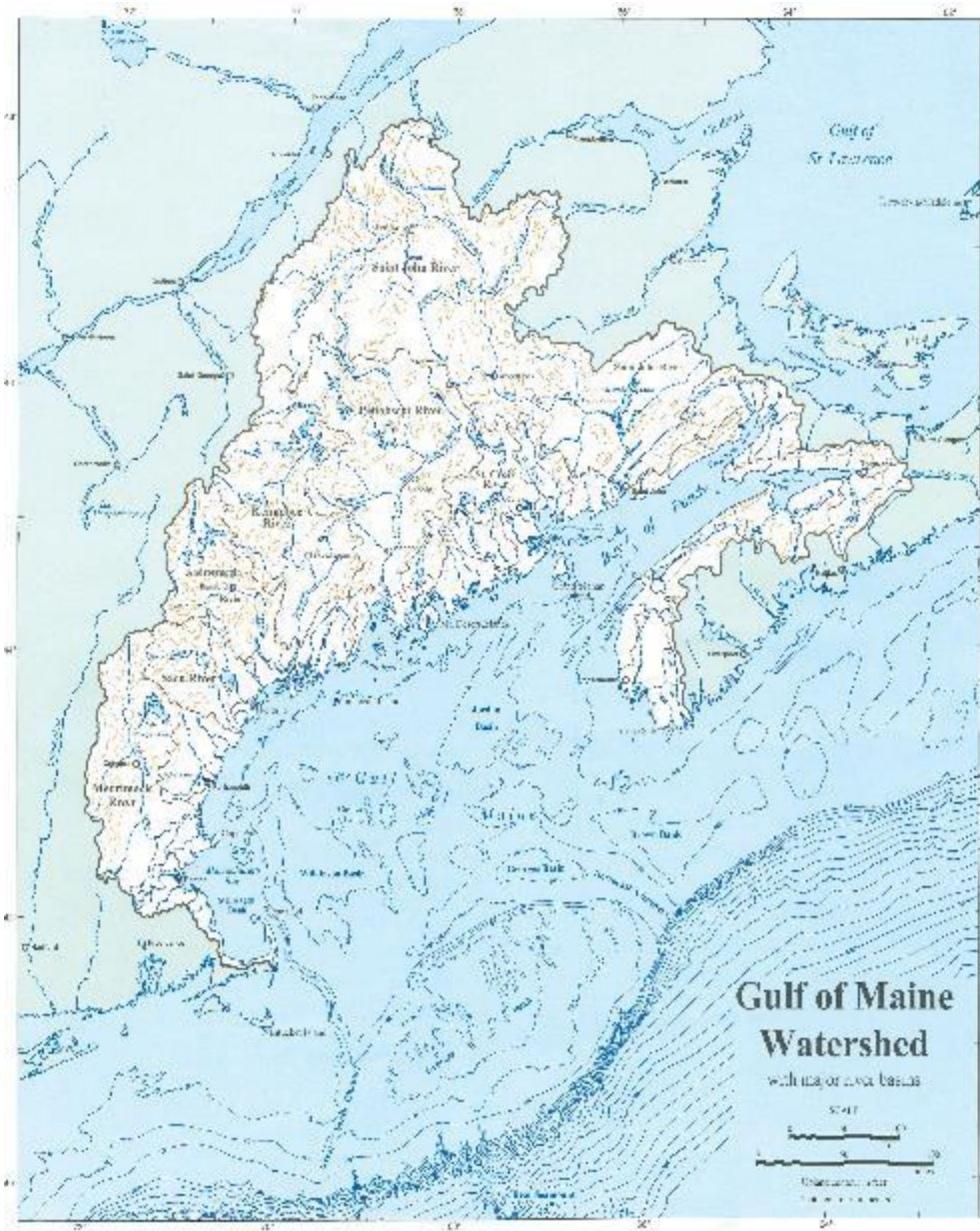
Figure 1. *Forest Paper, Yarmouth, Maine. c. 1915*



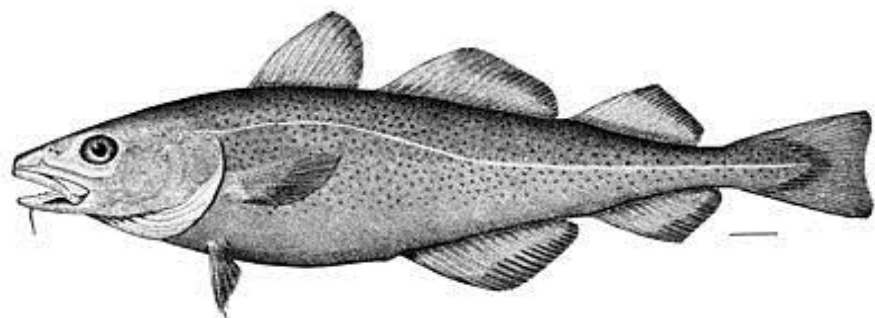
**Royal River
Watershed dams**



Presumpscot River

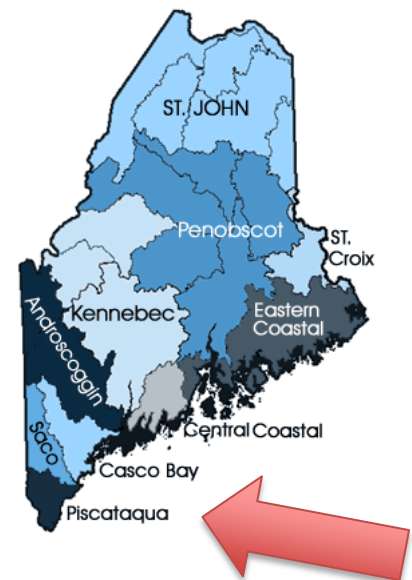


Map created by Richard D. Kelly, Jr., Maine State Planning Office, for the Gulf of Maine Council on the Marine Environment

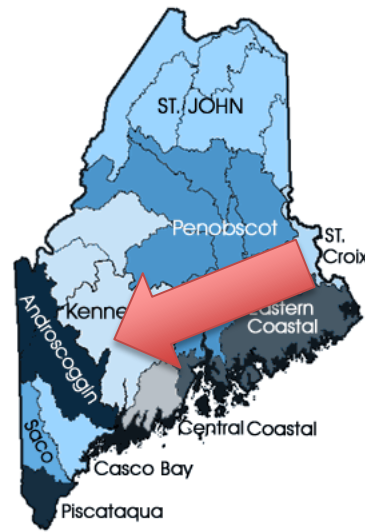




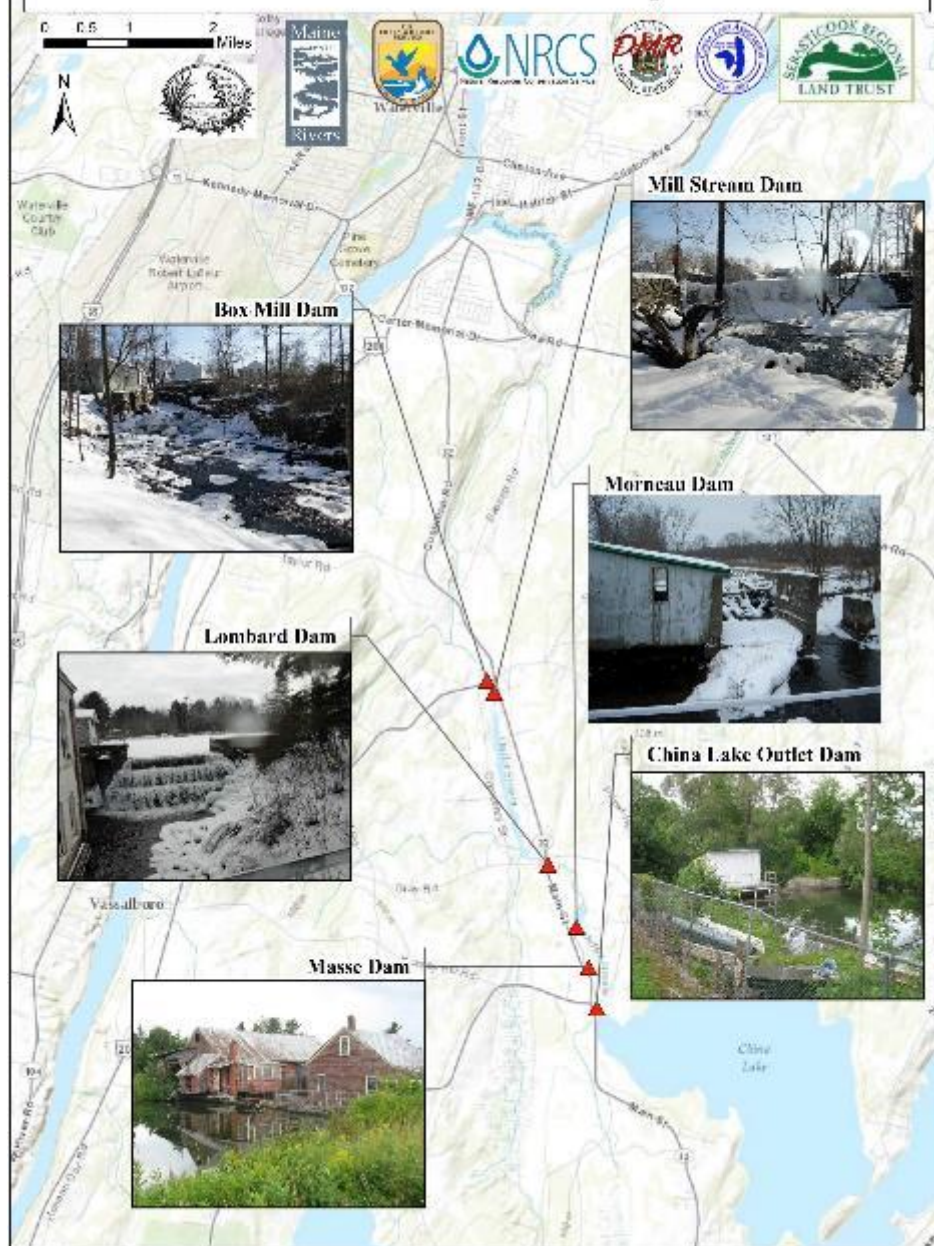
Old Falls Dam on the Mousam River



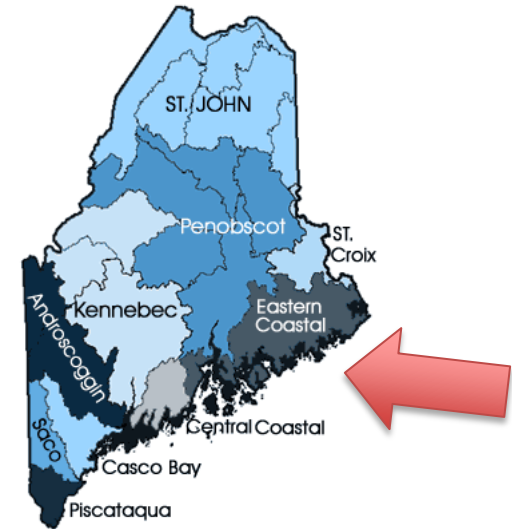
China Lake Alewife Restoration Initiative



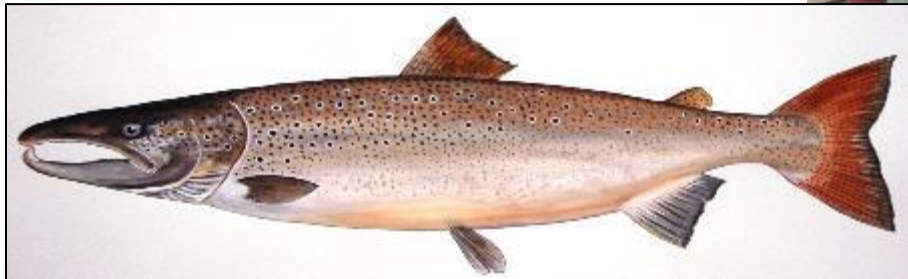
China Lake Outlet Stream Diadromous Species Restoration



Alewife Restoration Initiative



**Above: Dwayne Shaw,
Downeast Salmon Federation
Right: 22 ukuleles supporting
river restoration
Columbia Falls, ME**



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ECOLOGY

1000 dams down and counting

[J. E. O'Connor¹](#), [J. J. Duda²](#), [G. E. Grant³](#)

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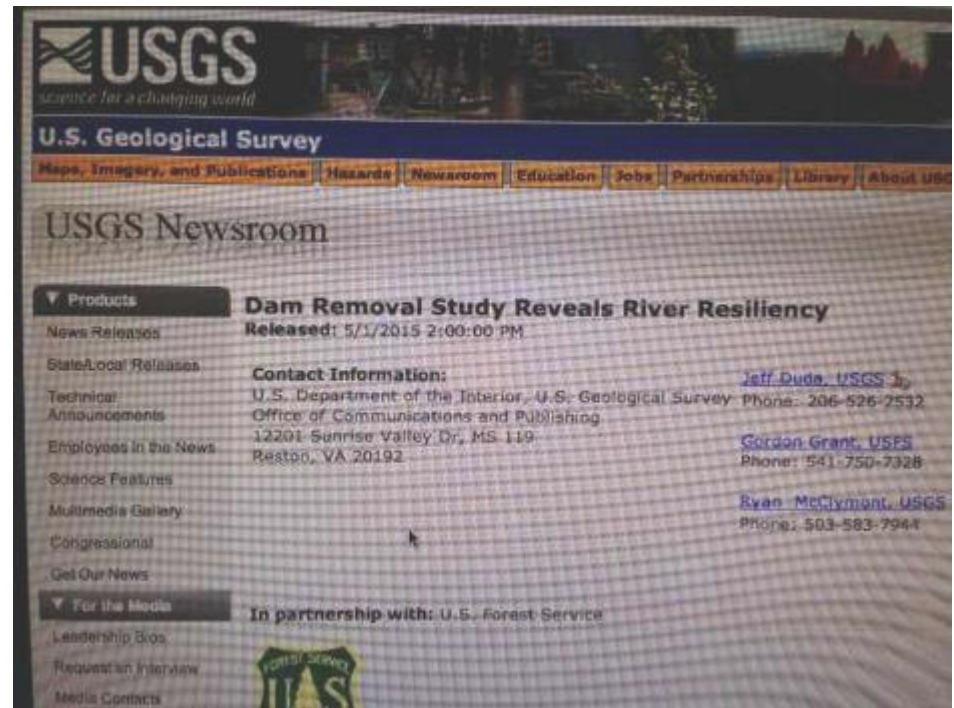
¹U.S. Geological Survey, Portland, OR, USA.

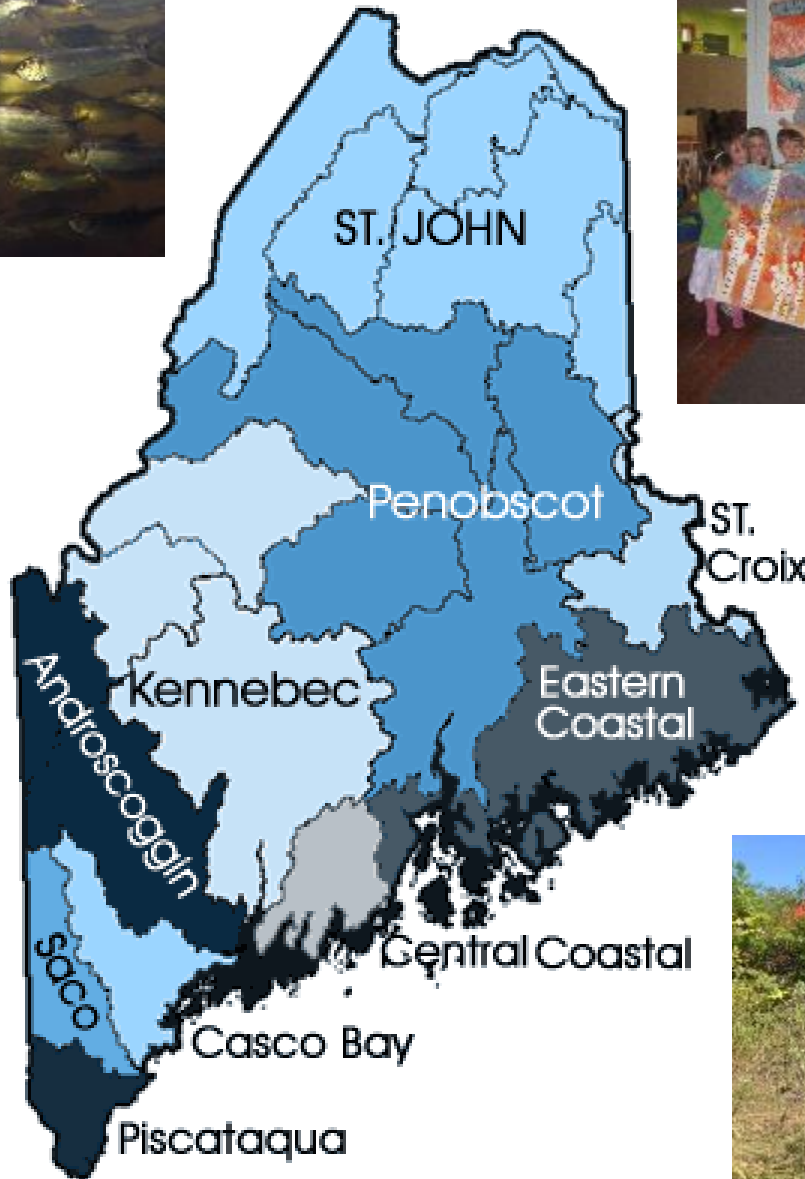
²U.S. Geological Survey, Seattle, WA, USA.

³USDA Forest Service, Corvallis, OR, USA.

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Forty years ago, the demolition of large dams was mostly fiction, notably plotted in Edward Abbey's novel The Monkey Wrench Gang. Its 1975 publication roughly coincided with the end of large-dam construction in the United States. Since then, dams have been taken down in increasing numbers as they have filled with sediment, become unsafe or inefficient, or otherwise outlived their usefulness (1) (see the figure, panel A). Last year's removals of the 64-m-high Glines Canyon Dam and the 32-m-high Elwha Dam in northwestern Washington State were among the largest yet, releasing over 10 million cubic meters of stored sediment. Published studies conducted in conjunction with about 100 U.S. dam removals and at least 26 removals outside the United States are now providing detailed insights into how rivers respond (2, 3).





**Supreme Court
Affirms States' Role
in Dam Licensing
*S.D. Warren Co. v.
Maine Board of
Environmental
Protection*, (2006).**



**Maine
Rivers**